

137 The bark of stone birch¹³³ trees, as of many others, the In-
 278 dians pound fine, mix with water and use as a medicine. This
 is the only variety of birch trees here. In Pensilvanien there
 are birch trees like those of Europe, though they do not grow
 to any size.

Aspen trees¹³⁴ are also found, though not in great numbers
 nor everywhere. One kind of tree is found here that I have seen
 nowhere else. The wood is soft and yellowish. The leaves
 are smooth and oval-shaped. The Indians call it *Wiseweminski*,
 the yellow tree.¹³⁵

317 Of oil wells I have seen three kinds, (1) wells that have
 an outlet; (2) wells that have no outlet, but are stagnant pools;
 (3) wells in creeks and even in the Ohio at two different points,
 one hundred and fifty miles from one another.

In the wells which have an outlet, oil and water together
 exude from the earth and where these flow grass and soil be-
 come oily. When there is no means of discharge one sees
 nothing more than oil welling up, which, if none has been taken
 off for some time, floats an inch or more in depth on the water.
 In the creeks it is possible to see some of the places where
 the oil flows, others not, for often the current carries the oil
 with it at such rate that you see the oil over all the surface of
 the water. In the Ohio there are, also, such places in the region
 of the oil wells. Here the current is very gentle and the Indians
 skim off the oil, though it is not easy to do this as the current,
 even though not, swift, keeps carrying it along. Such places
 are usually revealed by the strong odor. Even though the water
 of a river keeps carrying away the oil, one may smell it at a
 distance of a quarter of a mile from the well. The soil near
 an oil well is poor, either a cold, clayey ground, or if it is near
 a creek, a poor quality of sand at the top. Neither good grass
 or wood will grow nearby, hardly anything more than a few
 stunted oak trees.

If the Indians wish to collect oil, which they prefer to do
 where the well has no discharge, as it is there most easily secured,
 they first throw away the old oil floating on top, as it has a
 stronger odor than that which wells up fresh from the earth.¹³⁶

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The odor is somewhat like that of tar, though not very much so. They stir the water violently then let it settle and become clear. The more the pool is stirred the more abundantly does the oil flow. When it is clear they scoop it into kettles, and, as it is impossible to avoid getting some water, boil it and preserve it for use. They use it as a medicine in all sorts of cases for external application, thus for tooth-ache, head-ache, swelling, rheumatism, strained joints. Some also take it internally and it appears to have hurt no one in this way. Some, indeed, declare that the oil flows from the coal deposits, but this is not likely, for in the first place, there is no sign of pit coal to be seen in this region — one sees nothing more than poor sandstone and, in the second place, in other parts where there is much pit coal, as for example, along the Muskingum, no sign of oil is to be seen. Were the oil to be found there, the Indians would know of it, for they value it highly and have looked for it, but found none. Most probably it comes out of the earth. It is brownish in color and may be used in lamps, for it burns well.

Salt springs are to be found both along the Muskingum and along the Ohio. Of this salt the Indians make little use; they prefer to buy it from the whites, even though they have to pay a high price for it owing to the fact that it has to be brought a considerable distance from the seaports. Moreover, they use very little salt and seem not to require it. They often eat their food unsalted, even though they may have the salt, until they feel a longing for it.

These salt springs are usually to be found on the bank of a creek or even in the middle of the creek on a sand-bank, the fresh water flowing on both sides. The Indians have on occasion boiled a considerable quantity of salt in a short time at such a well, so that it would appear worth the labor to get it, especially as it is so expensive.

There are, also, many salt licks to which cattle, horses and game go in large numbers. These are generally springs that have salt or saltpetre¹³⁷ in them.

The common sort of stones in this region along the Ohio are the sandstones. Some are very hard, others soft. They

^ [i.e., crude oil. - Analyst]

135 are, for the most part, of a gray, fine sand and make as good whetstones as one might wish. Rocks you meet occasionally along the Ohio, but away from the river and here along the Muskingum very few, even most of, the mountains and hills are not rocky.

Pit-coal is found in abundance, but as there is no lack of wood it is little used and hardly thought of by the Indians. In Pittsburg the coal is used in fire-places and by blacksmiths.

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[276] A kind of stone, black in color, is found here, that is easily worked and cut. It has no sand in its composition and the Indians make tobacco pipes of it, some doing very neat work.

There is also a kind of stone, blue in color, which is very hard. It somewhat resembles the limestone of Pensilvanien, but examination has shown it to be different. Limestone has not yet been found in this region.

A mineralogist would find many more varieties to describe, to which I am unable to give even the names, especially along the shores of the river, where all kinds may be seen, green, yellow, blue, red and black. About ore I know little or nothing concerning this region. The Indians believed themselves to have found gold and silver, but what they produced as precious ore, because it resembled this somewhat, on the test and examination of whites was found to be sulphurous substance.¹³⁸ Whatever glitters, the Indians are apt to look upon at once as being gold or silver.

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[439] The Cherokees, who through the years have had much intercourse with the Delawares, brought with them many tobacco pipes for trade. These they made of quite white stone, probably white marble.¹³⁹ When completed they blackened the pipes and in such a way that they retained their color. These pipes are made so neatly that they are no heavier than the European pipes.

[213] From the Mississippi the Indians bring red marble, whenever they come from that direction. Of this pipes are also made. Such pipes, however, are as a rule to be seen only in the possession of chiefs or captains, for not many of them are to be had. A pipe of this sort is generally used in council or on solemn occasions. This is carried about by the chief counsellor, each

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one present draws a few whiffs of smoke and this is called smoking the peace-pipe.

There are four kinds of clay. There is the white, which is almost like chalk and with which, when dry, one can write as with chalk.¹⁴⁰ Another variety is quite black. This, however, becomes quite white when burned. Besides these, gray and yellow clays are found. A sort of yellow earth, rather of an orange tinge is found, of which the Indians, especially the warriors, make a fine color by burning.¹⁴¹ With this they paint themselves and they are particularly careful that the head shall be always red. It is not too much for the Wiondats to come here to Tuscarawi, a distance of at least a hundred miles, to supply themselves with this red coloring matter.

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Concerning plants and roots of medicinal virtue, it would be possible, if one were to devote himself to inquiry, to secure a great deal of information from the Indians, for what one of these does not know another does, each man and woman having some knowledge in this direction, some more, some less. Hence, the custom that a patient who has consulted an Indian and secured a medicine from him without, however, being benefited, will go immediately to another; if no relief is obtained through his advice, the patient goes to a third, a fourth until he finds one whose medicine helps. For many ailments they have very good remedies, e. g., for rheumatism. In respect to this affliction I have witnessed instances where they have effected a thorough cure and not only once or twice. At times they can secure desired results with only two or three kinds of roots, at other times more are required. If a simple remedy does not afford relief, they may use twenty or more kinds of roots. Even in such cases I know of cures having been effected. In treating rheumatism, bathing and sweating play a great part.

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They have remedies even for fevers. When a patient has been given a dose, they are generally able to tell from its workings whether he will recover or die. If he does not retain the medicine, this is regarded as a sign that he will hardly recover. I have paid some attention to this and like cases of treatment and found that the Indians have generally been correct in their

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137. A very questionable statement.

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138. It is doubtful what Zeisberger means here by "marble;" possible it was gritty sandstone.

139. Iron Pyrites or "Fool's Gold."

140. Kaolin or China clay; colors in clays are due to impurities. The black clay which burns white evidently contained carbonaceous matter.

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141. Yellow ochre.

142. Possibly a decoction made from pok-berries which would stimulate the secretion of the glands of the breasts, etc.

143. *Rhus toxicodendron* L., the poison vine or poison ivy.144. *Rhus vernis* L., the poison sumac, our most poisonous plant.

145. Not used by the medical profession today.

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146. *Odocoileus virginianus* (Boddaert).

147. The introduction of the rifle was the first step in destroying Nature's balance as applied to man and the native wild animals. Doubtless the deer and buffalo easily held their own in spite of the onslaughts of the Indians until the rifle gave the Indians a tremendous advantage as compared with their former weapons.

148. *Ursus americanus* Pallas.

149. In many cases the Indians multiplied the species of our larger mammals, basing their ideas on one or two unusually large individuals they happened to meet, or on some peculiar condition of the pelage. There is only one species of bear known from eastern United States.

150. *Cervus canadensis* (Erxleben) the wapiti, or "American Elk." The author is correct. The wapiti is nearly related to the stag, *Cervus elaphus* L., of Europe and is not an elk at all.151. *Bison bison* (L.)152. *Felis conguar* Kerr.153. *Lynx rufus* (Guldenstaedt).154. *Vulpes fulvus* (Dasmarest).155. *Urocyon cinereoargenteus* (Schreber).156. A black phase of the red fox *Vulpes fulvus*.157. *Procyon lotor* (L.)158. *Lutra canadensis* (Schreber).159. *Castor canadensis* Kuhl.

160. The steel trap was another white man's invention which, placed in the hands of the Indians, proved most destructive to some of the animals which formerly held their own against the less effective methods of the Indians. The price paid for the pelts by the whites, was of course an additional factor in the destruction of many of the native animals.

161. *Didelphis virginiana* Kerr.

162. Certainly open to question and probably merely an Indian belief.